Mahatma Gandhi Mission University,

Chh. Sambhajinagar

A

Ph.D. Final Synopsis on

"An Analytical Study of the Management of the CBSE Schools' and performance of the Students' in Marathwada Region"

In

Management & Commerce

By

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Final Synopsis

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Name & Signature

(Research Scholar)

Name & Signature

(Research Guide)

Introduction :

Building and nurturing an environment that fosters academic success requires a robust and efficient school administration. School administration plays a pivotal role in shaping the educational experience and the learning outcomes of students. This is because the decisions and policies put into place by school leaders, particularly those surrounding the implementation of educational programs, have a profound influence on how students engage with their studies. Analyzing the impact of school boards on student achievement and comparing different school board structures has become a topic of considerable interest in educational research, contributing to ongoing discussions regarding the role of school boards in education. Understanding the functions of school boards and the significance of effective school administration is crucial to maximizing instructional strategies and creating a supportive learning environment for students.

The Central Board of Secondary Education (CBSE) stands out as one of the most prominent educational boards in India. Over the years, CBSE has gained a reputation for providing high-quality education, which is one of the primary reasons it is often chosen over other educational boards. Studies have indicated that students enrolled in CBSE schools tend to come from relatively affluent financial backgrounds compared to their peers attending schools affiliated with other boards. This financial stability often provides students with access to additional educational resources, such as private tutoring, extracurricular activities, and advanced learning tools, all of which contribute to their academic success.

One of the distinguishing features of the CBSE board is its focus not only on academic excellence but also on recreational activities and skill development. While the core mission of CBSE is to deliver a high standard of education, it equally emphasizes the importance of holistic development, encouraging students to participate in sports, arts, and other extracurricular activities. These activities are designed to help students develop critical life skills such as teamwork, leadership, creativity, and time management. By fostering a balanced approach to education, CBSE aims to produce well-rounded individuals who are not only academically proficient but also equipped to face the challenges of the real world.

However, it is not just the CBSE board's curriculum that contributes to the success of its students; effective school administration is equally vital in maintaining a thriving learning environment. School administrators play a critical role in ensuring that the school operates smoothly and that the educational goals set by the board are met in a timely and effective manner. The responsibilities of school administrators include planning, organizing, directing, and controlling the various activities that take place within the school. This encompasses managing human resources, such as teachers and

staff, as well as material resources, such as textbooks, classroom equipment, and school facilities. Effective school administration ensures that these resources are utilized efficiently to meet the academic and developmental needs of students.

Moreover, the collaboration between the CBSE board and school administration is key to fostering a supportive learning environment. While the board sets the educational framework, it is the school administration's responsibility to implement these guidelines and tailor them to the specific needs of their student population. By working together, the board and school administration can ensure that students not only achieve their academic goals but also grow emotionally, socially, and physically. This cooperative effort supports the overall development of students and prepares them for the demands of higher education and future careers.

One of the main objectives of this collaboration is to provide students with a top-notch education. The management of schools plays a pivotal role in achieving this goal by ensuring that educational programs are well-organized and that resources are allocated effectively. In CBSE schools, the role of management is particularly significant because the board follows a standardized curriculum across the country. This standardization ensures that students, regardless of where they are located, have access to the same quality of education. Whether a student is studying in a major metropolitan city or a remote village, they can expect to receive the same level of academic instruction and opportunities for personal growth.

This nationwide standardization is one of the key benefits of the CBSE board, and it has contributed to the success of its students on a larger scale. Graduates of CBSE schools have consistently excelled in various fields, making significant contributions to the nation’s workforce. Many CBSE alumni go on to become leaders in industries such as technology, healthcare, and education, as well as in scientific research and defense services. Despite the relatively small proportion of the total student population attending CBSE schools, these graduates play an outsized role in driving the country’s economic, scientific, and industrial advancement.

At the core of this success is the effective leadership and management of CBSE schools. It is widely recognized that efficient leadership is the key factor behind the ability of these schools to provide students with a world-class education. School leaders are responsible for implementing well-thought-out initiatives that align with the board’s educational goals, ensuring that resources are used wisely to support students’ academic and personal development. These leaders are also tasked with creating a positive school culture, where students feel motivated and supported in their educational journey.

In addition to their academic responsibilities, CBSE school leaders must also place a strong emphasis on the overall development of their students. This means fostering an environment where students

can pursue their interests, develop their talents, and grow into well-rounded individuals. Whether it's through sports, arts, music, or community service, CBSE schools encourage students to explore their passions and cultivate a sense of curiosity and creativity. By doing so, they help students build the skills and confidence needed to navigate the complexities of adult life.

The success of CBSE schools in delivering high-quality education and shaping the future generation of the country is largely attributed to the effective leadership and administration of these institutions. Through a combination of rigorous academic standards, a focus on holistic development, and efficient use of resources, CBSE schools are able to create a supportive learning environment where students can thrive. The collaboration between the CBSE board and school administration plays a critical role in ensuring that students receive the best possible education, regardless of their location or background. By nurturing future generations with a well-rounded education, CBSE schools are contributing to the growth and development of the nation in a profound and lasting way.

Research Problem:

"**An Analytical Study of Management of The CBSE Schools' And Performance of Students' In Marathwada Region"**

Along with the Board program, The School Management has a vital role in the process of planning, organizing, directing and controlling the activities of an institution by utilizing human and material resources so as to effectively and efficiently accomplish Boards educational guidelines are being provided by the affiliated board.

The main objective is to explore the importance of managing education in order to provide students with high quality education and the role of management in achieving this goal.

Objectives:

1. To review the overall working of the CBSE Schools in Marathwada from their inception and suggest improvement therein.
2. To probe into other than academic activities such as sports, social, cultural and computing skill-based activities of the sample schools. To suggest a model based on my findings and observations.
3. To identify the problems in sample schools and make recommendations for excellence therein.
4. To exhibit the impact of the extent of development of district on students' performance.
5. To study implementation of CBSE guidelines/policies by school

Hypothesis:

H1: The school improvement depends on the implementation of management's timely decisions and policies.

H2: The students' performance has a direct correlation ship with Schools' academic and extra-

curricular activities.

H3: The majority sample CBSE schools in Marathwada lack infrastructure, trained staff and facilities to students as per norms of CBSE boards.

H4: There is a relationship between the extent of development of the district and performance of school students therein.

Significance of the Study:

This study holds substantial importance as it provides in-depth insights into the current state of CBSE schools in Marathwada, revealing critical challenges and opportunities for growth. It addresses various aspects that are essential to improving educational quality, including infrastructure, teaching methods, administrative practices, and the integration of extracurricular activities. These elements are vital for fostering an environment conducive to both academic success and the holistic development of students.

One of the key takeaways from this study is the importance of maintaining and enhancing the quality of education in Marathwada's CBSE schools by adhering to CBSE policies effectively. The study emphasizes that the proactive and cooperative application of these policies, along with continuous improvements, can help schools fulfill their mission of delivering high-quality, well-rounded education. By providing a thorough analysis of both academic and extracurricular activities in these schools, the research identifies areas that require attention and improvement.

Infrastructure Development:

The study highlights inadequate infrastructure as a significant issue in many CBSE schools in Marathwada. Without proper classrooms, libraries, labs, and facilities, schools struggle to provide an environment that supports effective learning. Upgrading and expanding infrastructure is crucial to creating a physical space that encourages active student participation and accommodates modern teaching practices. Investing in infrastructural improvements, particularly in rural areas, would allow these schools to provide the same quality of education available in urban centers, helping to bridge the gap between different regions.

Modernizing Teaching Methods:

Another essential finding of the study is the need to modernize teaching methods. Traditional, outdated approaches are often insufficient to meet the demands of today's fast-changing educational landscape. CBSE schools in Marathwada must adopt more student-centered, innovative pedagogical strategies that promote critical thinking, problem-solving, creativity, and collaboration. By incorporating technology and contemporary educational tools, teachers can create dynamic and engaging learning environments that better prepare students for future challenges.

Teacher Training and Professional Development:

The study stresses the importance of teacher training and professional development programs. Teachers are at the heart of any educational system, and their ability to deliver quality education is directly linked to their training and professional growth. The research indicates that CBSE schools in Marathwada would benefit greatly from enhanced training programs that focus on both content knowledge and modern teaching techniques. Continuous professional development would equip teachers with the skills they need to adapt to new educational demands, use technology effectively, and engage students in meaningful ways.

Strengthening Administrative Practices:

Effective administration is another crucial aspect identified in the study. Many CBSE schools in Marathwada face challenges due to inefficient administrative practices, which can hinder the implementation of policies and the smooth functioning of the schools. By improving management practices, schools can ensure that resources are allocated efficiently, staff and students are supported, and educational programs are executed successfully. Strong school leadership and administration play a pivotal role in achieving the broader educational objectives set by the CBSE board.

Integration of Extracurricular Activities:

In addition to academic improvements, the study underscores the vital role of extracurricular activities in students' holistic development. Activities such as sports, cultural programs, and skill-based initiatives (e.g., computer-related or social activities) contribute significantly to the personal growth of students by promoting teamwork, leadership, and creativity. Incorporating these activities into the school curriculum, with dedicated time slots, resources, and opportunities for inter-school competitions, would not only enhance student engagement but also develop their social, emotional, and cognitive skills. This approach fosters a more well-rounded education, preparing students to excel not only academically but also in life beyond school.

Impact on Policy and Stakeholders:

Finally, the study serves as a guide for a wide range of stakeholders—lawmakers, educational officials, school administrators, and educators—by offering actionable recommendations to improve the overall quality and effectiveness of CBSE education in Marathwada. The findings provide a strong foundation for policy decisions and reforms aimed at addressing the region's educational challenges. By focusing on areas such as infrastructure, teaching methods, and extracurricular programs, the study aims to help stakeholders develop strategies that will elevate the standard of education across the region.

This study is significant because it provides a roadmap for the improvement of CBSE schools in

Marathwada, offering valuable insights into both the academic and extracurricular spheres. By addressing key challenges—such as outdated teaching methods, inadequate infrastructure, and insufficient administrative practices—the research presents a holistic approach to enhancing educational quality. Moreover, its emphasis on extracurricular activities highlights the importance of a well-rounded education that nurtures students' overall development.

Ultimately, the study offers practical solutions that can help policymakers, educators, and other stakeholders in Marathwada improve the educational experience for students, ensuring that CBSE schools in the region not only meet but exceed national educational standards. This will have a lasting impact, producing graduates who are not only academically strong but also well-equipped to contribute to the nation's socio-economic and technological advancement.

Literature Review:

The literature review offers a comprehensive theoretical evaluation of key concepts related to the topic, along with an in-depth analysis of the relevant research and studies.

Special Characteristics of Education in CBSE Schools in India:

- Parents, irrespective of their educational qualifications, actively support their children's academic endeavours by being close by and supervising them, according to a study done in 2019 by Prathak and Bhatia. Remarkably, parents who had struggled academically in their own school years—especially in Class X—continued to be actively committed in helping their kids succeed in Class XI [1].
- **Review of the literature on Maharashtra's CBSE schools**
- Students' academic performance and overall development are significantly influenced by the management strategies used in Central Board of Secondary Education (CBSE) institutions. Numerous scholarly investigations have scrutinised the correlation between the administrative tactics employed by CBSE schools and the scholastic achievements of learners, specifically in the Marathwada district of Maharashtra.
- A study conducted in 2017 by Sharma and Sood [6] examined the organisational atmosphere of Maharashtra's CBSE schools, with an emphasis on elements including student support systems, teacher collaboration, and leadership philosophies. The study made recommendations for improving stakeholder collaboration in CBSE schools and emphasised the significance of a positive organisational climate in promoting student performance.
- The effect of organisational procedures on academic achievement in CBSE schools was examined by researchers Sharma and Patel (2018) in their work, "An Analytical Study of the Management of CBSE Schools and Performance of Students in Marathwada Region." Aspects of school

management such as curriculum design, teacher preparation, student support systems, and leadership styles were all examined in the study. The research's conclusions emphasised the significance of efficient management techniques in fostering academic success, student involvement, and general school efficacy [2].

- The function of leadership in CBSE schools has received additional attention. A study on principals' leadership philosophies in Marathwada CBSE schools was carried out by Singh and Kumar (2019), who focused on the impact of leadership on the culture of the organization and the performance of the students.
- In addition to improving student engagement and learning results, the research emphasized the value of transformational leadership in creating a healthy school climate [3].
- Research has also looked into the teaching methods and curriculum design used in Marathwada region CBSE schools. By comparing the ways in which the curriculums of CBSE and state board schools were implemented, Deshmukh and Pawar (2020) emphasized the distinctive characteristics of the CBSE curriculum and its influence on student achievement. Innovative teaching strategies and curriculum modifications are required to meet the demands of students with varying learning styles and needs, according to studies [4].
- In Marathwada's CBSE schools, Patel and Sharma (2017) looked into the function of academic advising and counselling services as means of providing help for students.
- The usefulness of counselling programs in meeting the social, emotional, and intellectual requirements of students was investigated in this study [6] which ultimately led to better health and performance from the students.
- Studies have also looked at the chances and problems that CBSE schools in the Marathwada area confront. Accountability and openness are crucial in school management, as demonstrated by the research done by Pandey and Gupta (2018) [7] on the governance and regulatory compliance of CBSE schools. Along with suggestions for improving governance procedures, the research offered insights into the institutional elements influencing school success.
- All things considered, the body of research highlights how important good management techniques are to fostering student achievement and overall school performance in Marathwada district CBSE schools.
- Although these studies offer insightful information about the management of CBSE schools and how it affects student performance, more study is required to address new issues and look into ways to keep improving school management techniques [7].
- The body of research on CBSE schools in Marathwada constantly highlights how important good

management techniques are to promoting student achievement and overall school efficacy. These studies demonstrate how complex school management is and how much of an influence it has on several facets of student achievement. For instance, Sharma and Mishra (2020) investigated the connection between academic success in CBSE schools and principal leadership styles. Their results emphasized the necessity for visionary leadership in school management and the role that transformational leadership plays in promoting better academic outcomes [8].

- The difficulties that CBSE schools in Marathwada encounter were also examined in a study by Patel et al. (2019) [9], with a focus on resource allocation and infrastructural development. In order to facilitate efficient teaching and learning processes, their study demonstrated the critical requirement for appropriate infrastructure and resource allocation. Schools that follow the CBSE model can establish a learning environment that supports the development of their students by tackling these issues.
- As a result, the body of research indicates how crucial it is for CBSE schools in the Marathwada area to implement good management techniques. Schools may establish an environment that supports student performance by tackling infrastructural problems, improving leadership techniques, and resolving governance-related concerns.
- Nevertheless, more investigation is required to examine new issues and find creative answers that might promote ongoing enhancements to school administration procedures [9].
- "An Analytical Study of the Management of CBSE Schools and Performance of Students in Marathwada Region" is the title of a thorough investigation done by Sharma and Patel (2018) [2]. Their study looked at how student performance in CBSE schools was affected by management techniques such as leadership philosophies, curriculum development, teacher preparation, and student support systems. The results emphasised the significance of efficient management techniques in fostering academic success, student involvement, and general school efficacy.
- In summary, the literature that is currently available emphasises how crucial effective management practices are to promoting student success and overall school efficacy in Marathwada localities in CBSE schools. While these studies provide valuable insights, further research is needed to address emerging problems and explore strategies for continuously enhancing school administration practices.

Review of Literature-Gaps Identification:

We have thoroughly explored the goals and key components of our research by having meaningful conversations with some of the top authorities in the field. We were able to obtain important insights and propose our research framework as a result of these encounters. The input we got from these

eminent scholars was crucial in confirming the importance, applicability, and requirement of our research. Their feedback not only confirmed our methodology but also indicated areas in which our study could be more broadly used, highlighting its value to the scholarly community and possible practical implications. Our research orientation has been improved and the value of our work within the area has been reaffirmed thanks to this cooperative effort.

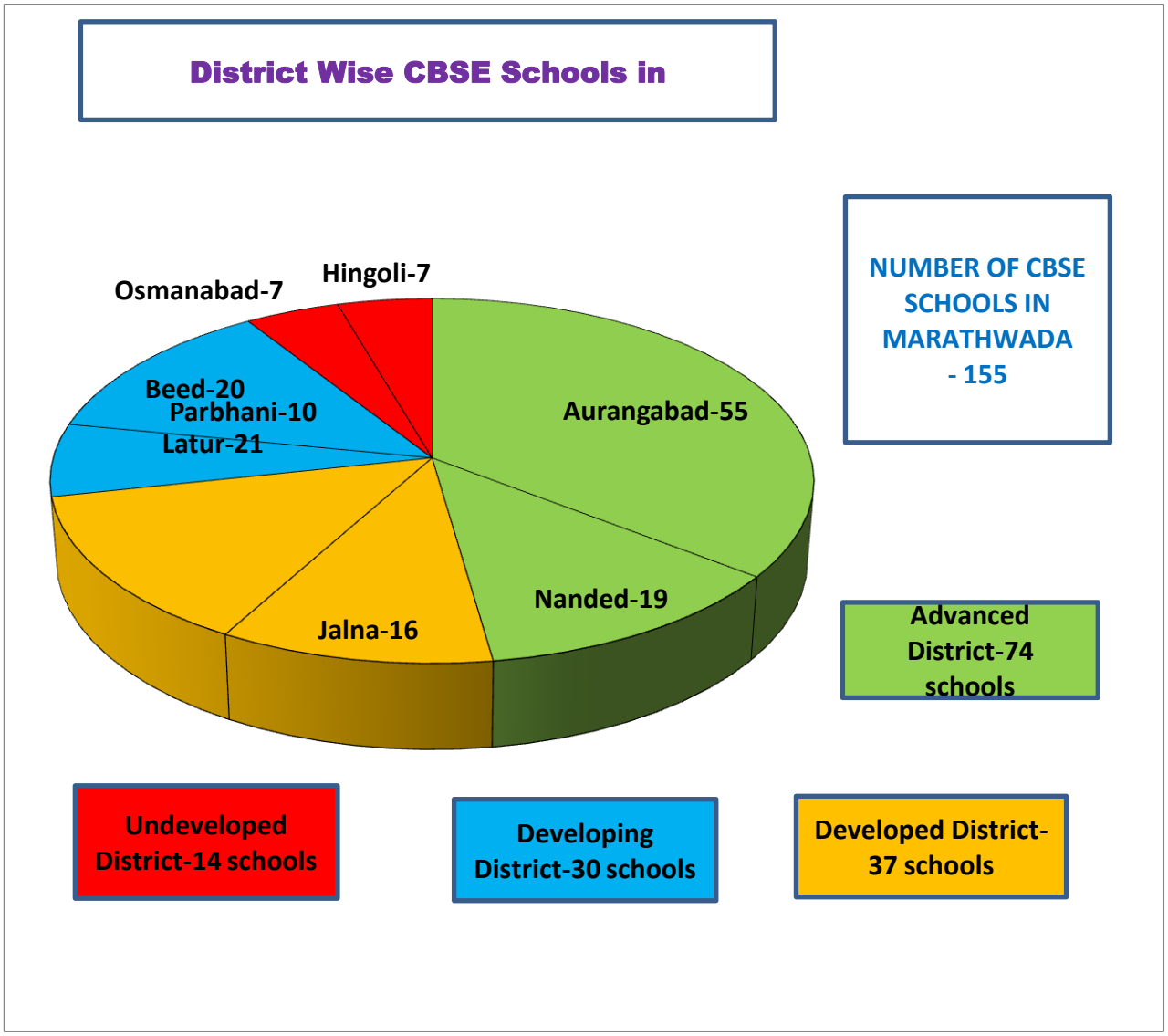
Research Methodology:

The research methodology will outline key details, including:

- Types of data collected
- Methods and techniques employed for analysis
- Sample size and characteristics
- Other relevant aspects essential to the research process.

Research Methodology	
Type of Research	Qualitative& Quantitative
Research Design	Exploratory Research
Nature of Data	Primary data and Secondary data
Sampling Technique	Random Sampling and Simple Random Sampling
Geography	Marathwada (CBSE Schools)
Population Sample Size	155 CBSE Schools
Sample Size	Approximately 220
Data Collection Method & Tools	Questionnaire, Online Survey tools, books, magazines, published articles both from Journals and News Papers, available surveys, published and unpublished papers, reports, periodicals, CBSE New Delhi circulars, notifications, newsletters and

	annual reports of the schools and any relevant literature published and websites.
Respondents	Teachers and office bearers of Schools' management for primary data collection.



Research Approach & Design

- The definition of functional research, which incorporates many research methodologies, applies to this study. A mixed-methods research pattern's philosophical supporting is pragmatism since it focuses on a situation and uses diverse techniques to learn about it (Creswell & Creswell, 2017; Denscombe, 2008).
- Rationality offers a middle way when researchers assess that neither statistical nor subjective

strategies by themselves can produce sufficient data for the particular study issues under discussion (Denscombe, 2008). Pragmatists believe that although reality does exist, it is continually changing as a result of our choices.

- In addition, an explanatory case study approach was acceptable given the contemporary workplace difficulties since learning and development approaches are evolving quickly. A widely used strategy that allows the researcher to combine the advantages of quantitative and qualitative research methodologies in a single study is known as a "mixed methods" approach (Creswell & Clark, 2017).

The justification for choosing the design technique is given below.

- It seems reasonable to start the processes with a quantitative phase because the research challenges are both more quantitative in character.
- The researcher was more likely to perform a quantitative study given their interest in data analytics. Some of the participants were able to be contacted by the researcher once again for the purpose of gathering qualitative data.
- The technique of getting the data required employing surveys that were both online (through Google Forms) and offline (via paper forms), and which only contained closed-ended questions.

Data collection

The Final Questionnaire: A Comprehensive Overview

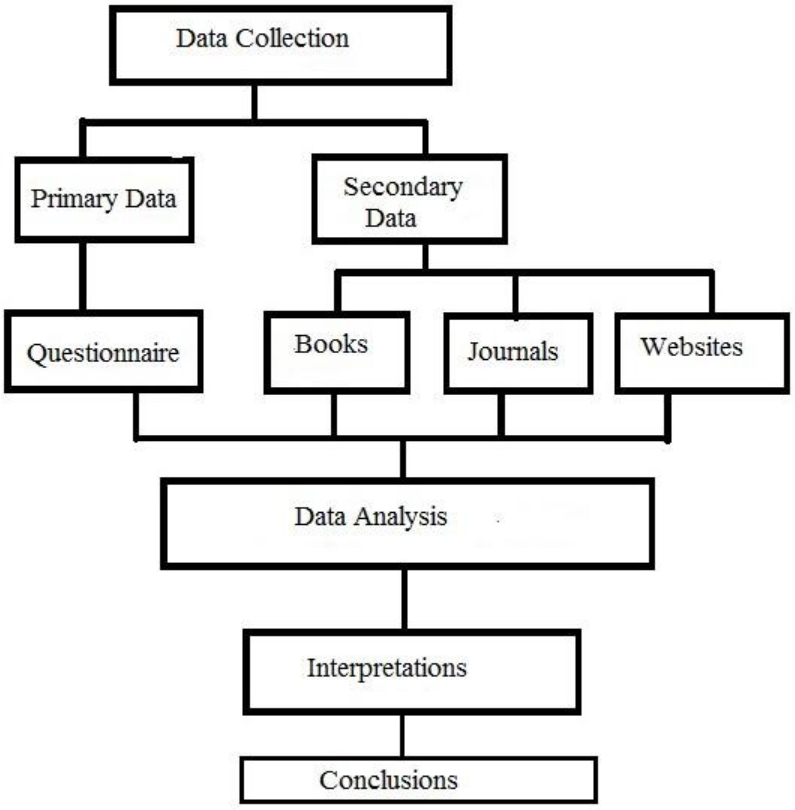
A total of twenty-four questions were carefully chosen and authorised for inclusion in the final version of the questionnaire. The foundation of the data collection process consisted of these questions, which also acted as the main channel for extracting important insights. The information obtained from this questionnaire was painstakingly collected, documented, and ready for analysis when respondents supplied their feedback. This was a pivotal point in the research process since it established the framework for accomplishing the goals and responding to the current research questions.

Primary Data: Gathering primary data was the cornerstone of the research process. With this method, information was directly gathered from people who have firsthand experience with the topic of the inquiry. In this instance, a comprehensive questionnaire was carefully created and distributed in order to get feedback from the teaching staff and management authorities, two important groups.

A survey approach was used for the main data collection process, which made it possible to obtain information from a wide range of participants in an organised and methodical manner. In order to guarantee thorough coverage, the poll was specifically designed to include individuals from managerial and instructional staff roles throughout the Marathwada region. The identified respondents were given

questionnaires, and they were invited to react with their thoughts on a range of subjects related to the study's goals.

The questionnaire was carefully designed in order to extract particular information that would help to accomplish the predetermined objectives of the study. It was mostly made up of closed-ended questions that were intended to speed up the answer process and make it easier to gather focused data quickly. By using closed-ended questions, the researcher hoped to reduce ambiguity and preserve consistency in responses, improving the validity and dependability of the information gathered.



Data Collection Procedure: Pictorial Representation

Secondary Data:

Books, periodicals, journals, newspapers, and the internet were among the many places from which secondary data for this study was acquired. Regarding the goals of the research, several sources provide insightful pre-existing data. Through the use of secondary data, the study enhanced the depth of analysis and supported main data collection efforts. Using a range of secondary sources allowed for a thorough investigation of the topic, utilising the knowledge and understanding that had been gained from earlier studies and publications. The research outputs were more robust and valid thanks to this approach, which also allowed the study to contextualise findings within the body of current literature.

What is Questionnaire?

Questionnaire is a research instrument consisting of a series of questions and other prompts for the

purpose of gathering information from respondents. Although they are often designed for statistical analysis of the responses, this is not always the case. The questionnaire was invented by Sir Francis Galton.

The questionnaire is the main instrument for collecting data in survey research. Basically, it is a set of standardized questions, often called items, which follow a fixed scheme in order to collect individual data about one or more specific topics.

A good questionnaire is one which help directly achieve the research objectives, provides complete and accurate information; is easy for both interviewers and respondents to complete, is so designed as to make sound analysis and interpretation possible and is brief.

Designed Questionnaires for employees to collect the information. The questionnaire was carefully designed in order to extract particular information that would help to accomplish the predetermined objectives of the study. It was mostly made up of closed-ended questions that were intended to speed up the answer process and make it easier to gather focused data quickly. By using closed-ended questions, the researcher hoped to reduce ambiguity and preserve consistency in responses, improving the validity and dependability of the information gathered.

Pilot Study and Questionnaire Modification: Next step is to carry out pilot experiment. Data is gathered from the subgroup of chosen sample population to inspect that the needed data is getting generated or not. It was discovered during the pilot study that several of the questions did not elicit the expected responses, thus the questionnaire had to be revised. As a result, the questionnaire was improved to include 24 questions that were specifically designed to get insightful answers from participants.

Reliability of the questionnaire By using Cronbach's alpha:

A statistical metric known as Cronbach's alpha, or just alpha, is used to evaluate the inner uniformity or dependability of a measure or a group of responses to a survey. Lee Cronbach, the person who created this measure in 1951, is honoured by the name. In order to assess the regularity of answers to a group of related items aimed at evaluating a latent construct or variable, researchers from a variety of fields frequently utilise Cronbach's alpha.

It is usual practice to compute Cronbach's alpha using data analysis tools like SPSS, R, or Python. To make sure that the measurements are precise and uniform, investigators use it when developing and validating tests or scales. It can also be used to assess how reliable several test iterations are in comparison to one another or to assess how dependability varies over an extended period.

For the purpose of evaluating the validity of measuring scales in research, Cronbach's alpha is a useful statistical instrument. Research tools are used in studies to gather data, and these assists investigators

determine if the items on a scale assess an identical fundamental concept regularly.

The questionnaire includes 2 sections. The first section includes 11 demographic questions. The second section includes 28 questions related to study. Q17 & Q24 are multiple choice questions.

The reliability of the questionnaire i.e. the Cronbach alpha = 0.953

Here the Cronbach alpha; reliability of the questionnaire is excellent.

The reliability of the questionnaire is calculated as follows.

Reliability Statistics	
Cronbach's Alpha	N of Items
.953	28

Item-Total Statistics			
Questions	Cronbach's Alpha if Item Deleted	Questions	Cronbach's Alpha if Item Deleted
Q12.1	.953	Q16.1	.949
Q12.2	.953	Q16.2	.949
Q12.3	.953	Q16.3	.949
Q13.1	.947	Q16.4	.949
Q13.2	.948	Q18.1	.952
Q13.3	.948	Q18.2	.951
Q14.1	.947	Q18.3	.953
Q14.2	.947	Q18.4	.951
Q14.3	.948	Q19	.951
Q14.4	.948	Q20	.950
Q15.1	.948	Q21	.951
Q15.2	.948	Q22	.952
Q15.3	.947	Q23	.952
Q15.4	.948		

Q15.5	.948		

Since there is no high variation of the reliability alpha (if the question deleted) from the Cronbach alpha, which is 0.953; all the questions are equally important. Hence the same questionnaire is applied for main study.

Population & Sampling:

Sampling Technique

Simple Random Sampling method was selected to pick out the sample from the population. The effect of organizational working environment will be uniform on all the employees of the organization was the objective. This made a situation that each employee had the similar chance to get selected as sample.

Sample size and Population

Data is gathered from Maharashtra state using simple random sampling method. The questionnaire is distributed among 300 employees. The data collected from the same was studied and it was noticed that 29 employees had not provided sufficient answers and therefore this data of 29 employees was rejected. The final report consisted of 271 employees as it was considered suitable and sufficient for the analysis.

According to an assessment of the available literature, sample size should be determined using power analysis (Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, 2006). Power analysis, which considers the section of the model with the most predictors, can be used to calculate the minimum sample size (Hair, J.F., Risher, J.J., Sarstedt, M. and Ringle, 2019). (Kline, 2005) provided recommendations for sample sizes when examining structural equation models, stating that samples of 100 or less should be regarded small, samples of 100 to 200 should be considered medium, and samples of 200 or more should be considered large.

Data Analysis:

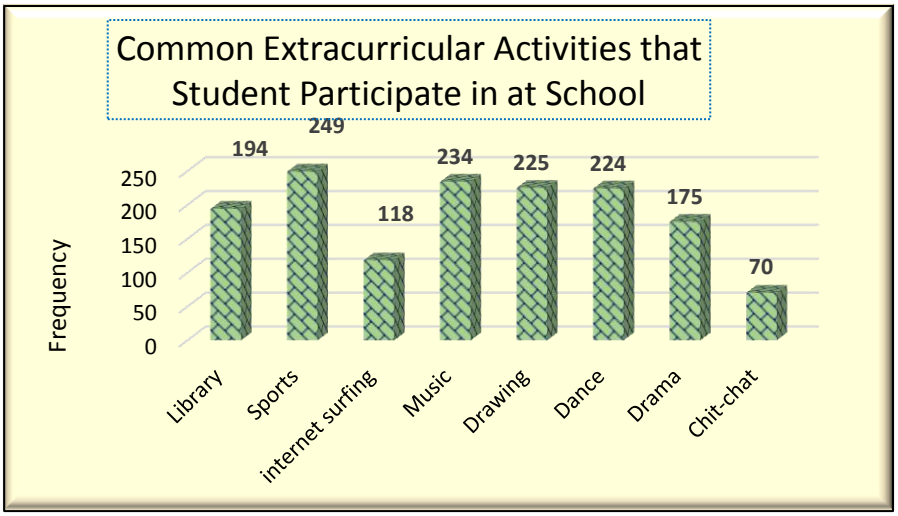
Frequency Distribution Method:

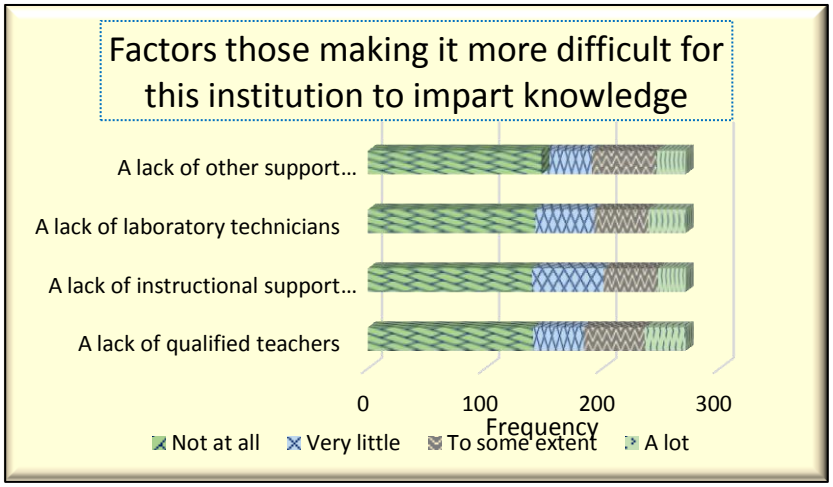
Frequency measures the time span in which something has taken place. The frequency monitors the duplication of particular occurrence in the observed data.

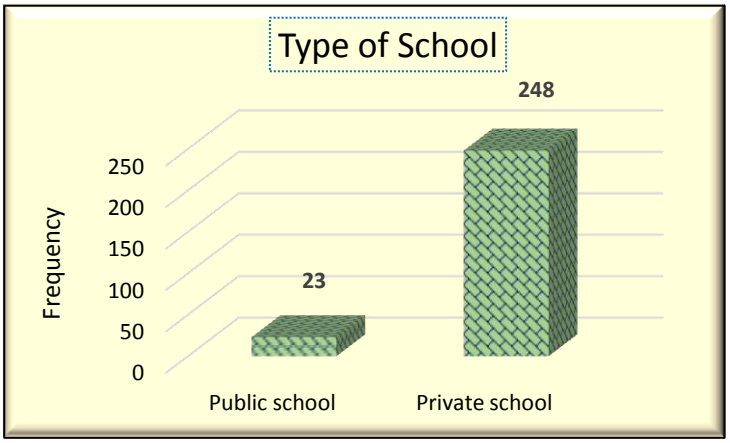
Frequency distribution uses class intervals to exhibit a wide span of values for the data inspection. The periods are structured taking into consideration the higher and lower value amid definite point. Dissimilarity is observed among frequency distribution series and a frequency distribution table. In frequency distribution series, the x-variable is distinct arithmetical, while in a frequency distribution table, continuing values are used.

Graphical representations such as pie charts and bar graphs, along with the Relative Frequency Distribution,
are crucial tools for analyzing and interpreting data distributions. By revealing the fundamental elements causing dataset variance and simplifying datasets, Factor Analysis serves as a useful supplement to existing
techniques. These methods when combined allow for efficient data interpretation and analysis across a range
of study fields.

We attained results from questionnaires by using frequency distribution method. Here are few examples:







Population Proportions Tested with the Z-Test Proportion: When determining if two population proportions are equal, one statistical technique is to apply the Z-Test. Given that μ1 and μ2 are the population proportions under comparison, the null hypothesis for this test is commonly written as H0: μ1 = μ2. How a Two-Proportion Z-Test Is Performed:

The following formula to calculate the Z-statistic used:

$$Z = \frac{\hat{p} - p_0}{\sqrt{\frac{p_0(1-p_0)}{n}}}$$

Where:

Here $\hat{p}$ = sample proportion, p_0 = hypothetical value = 75% = 0.75, n = sample size = 271

SPSS Software:

A complete statistical program that is frequently used in academic and research settings for quantitative data analysis is called SPSS. Because of its point-and-click functionality and user-friendly design, researchers with different degrees of statistical competence can utilize it.

Utilizations of SPSS:

Quantitative Data Analysis: Descriptive statistics, inferential tests (such as t-tests and ANOVA), correlation analysis, and regression modelling are among the tools that SPSS offers for analyzing quantitative data.

Qualitative Data Handling: Although SPSS is primarily designed for quantitative analysis, text and string variables can be utilized to handle and analyses qualitative data. To code and analyses narrative replies or qualitative characteristics, researchers can enter them into SPSS.

Analysis of Survey Questionnaires: SPSS is frequently used to examine survey data that includes both qualitative and quantitative inquiries. It can handle both closed-ended questions with predetermined response alternatives (quantitative) and open-ended responses (qualitative).

Because of its adaptability and strong analytical features, SPSS is a tool of choice for researchers in many fields, facilitating based on data making choices and testing assumptions in statistical projects.

All things considered, the Z-Test for proportions is a useful statistical tool for comparing population proportions, and SPSS is a user-friendly platform for managing many kinds of investigation data, such as surveys and questionnaires, and for doing quantitative data analysis.

Experimental Analysis:

H1: The school improvement depends on the implementation of management's timely decisions and policies.

- To test the hypotheses,
- The null hypothesis, H0:
- The school improvement does not depend on the implementation of management's timely decisions and policies.
- Vs.
- The alternative hypothesis, H1:
- The school improvement depends on the implementation of management's timely decisions and policies.

Parameter Under Study	Frequency	Proportion	Z Statistics	P value	Significance
Agreement to 'School improvement depends on the implementation of management's timely decisions and policies'					
Yes	260	0.96	7.96	0.0000	Significant

- ✓ If p value < 0.05, the level of significance; the alternative hypothesis is accepted. The school improvement depends on the implementation of management's timely decisions and policies. Hypothesis1 is accepted.

H2: The majority sample CBSE schools in Marathwada lack infrastructure, trained staff and

facilities to students as per norms of CBSE boards.

- ✓ To test the hypotheses,
- ✓ The null hypothesis, H0:
- ✓ The majority sample CBSE schools in Marathwada do not lack infrastructure, trained staff and facilities to students as per norms of CBSE boards.
- ✓ Vs.
- ✓ The alternative hypothesis, H1:
- ✓ The majority sample CBSE schools in Marathwada lack infrastructure, trained staff and facilities to students as per norms of CBSE boards.

Parameters Under Study	Frequency	Proportion	Z Statistics	P value	Significance
Teachers					
100 & below	233	0.86	4.17	0.0000	Significant
Staff for educational support					
100 & below	232	0.86	4.03	0.0000	Significant
School administrative or management personnel					
50 & below	230	0.85	3.75	0.0001	Significant
School Infrastructure facilities and Utilities available on campus about gender sensitivity					
Does the school have separate toilet facilities for both genders? (Yes)	262	0.97	8.24	0.0000	Significant
Does the school provide adequate sports facilities to meet the requirements of both genders? (Yes)	256	0.94	7.40	0.0000	Significant
Does the school have a counsellor to address the growing up concerns of both genders and	248	0.92	6.28	0.0000	Significant

provide support? (Yes)					
Satisfaction with the available infrastructure, trained staff and facilities provided to students of school (1 = min and 5 = Max)					
Average to Max (3,4 & 5)	257	0.95	7.54	0.0000	Significant

- ✓ If p value < 0.05, the level of significance; the alternative hypothesis is accepted.
- ✓ Since p value is less than 0.05 for all 7 parameters; the alternative hypothesis can be accepted for all parameters.
- ✓ For the all the parameters alternative hypothesis is being accepted.
- ✓ The majority sample CBSE schools in Marathwada lack infrastructure, trained staff and facilities to students as per norms of CBSE boards.

Hypothesis2 is accepted.

In this way all the hypothesis were tested.

CBSE Functioning Model:

We have meticulously carried out an extensive investigation in an effort to meet the goal of providing a model based on our findings from research and observations. As a result, we developed a model called the "CBSE Functioning Model," which outlines the three main curriculum components of CBSE: academics, extracurricular activities, and management. Our observations have led us to conclude that the first pillar, management, is crucial in managing staffing and infrastructure concerns that include instructional staff, lab assistants, and administrative staff. The implementation of policies is continuously monitored and reviews are carried out on a regular basis. The Management division is in charge of educating staff and making sure policies are followed, which means that they must constantly monitor the Extracurricular and Academic pillars.

Activities related to curriculum evaluation and selecting appropriate teaching resources, like whiteboards and e-content platforms, are within the purview of the Academic department. Remedial lessons are suggested as necessary, and the School-Based Continuous Evaluation Method is used to evaluate students' progress. Students are labelled as academic achievers if they receive the required grade. By supporting each student's unique personality, the third pillar seeks to promote the holistic development of the students. Students are given opportunities for growth and enrichment through the introduction of sports, cultural, social, and skill-based activities. As they move through these pathways, students experience a full

development of all aspects of themselves.

Our goal in outlining these pillars within the CBSE Functioning Model is to offer a methodical framework that promotes students' overall growth. By virtue of their efficient administration, demanding academic programs, and varied extracurricular activities, CBSE schools are able to develop well-rounded individuals who possess the abilities and proficiencies required to succeed in any area of life.

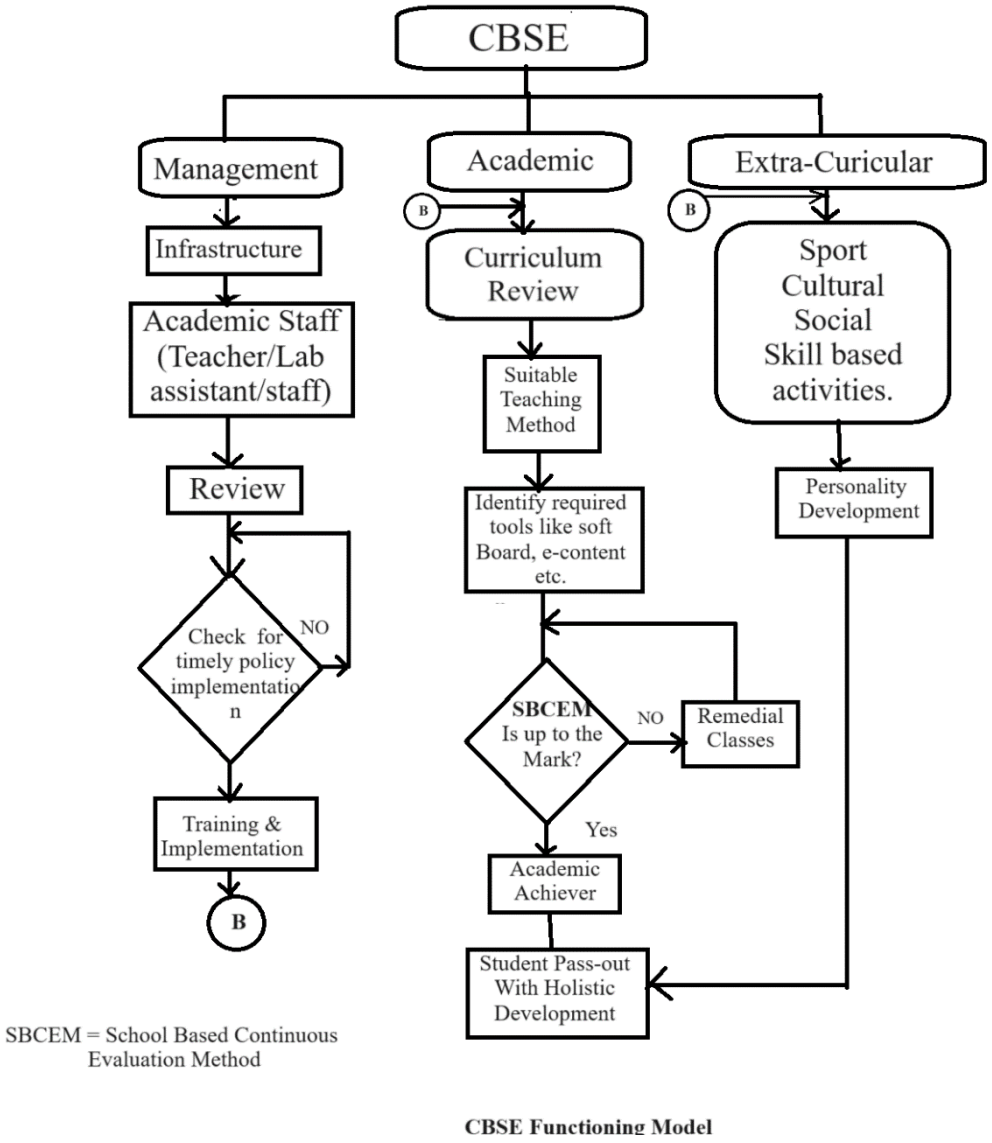


Figure 5.36 CBSE Functioning Model

Conclusions:

Based on the objectives, following key conclusions are drawn from the review of CBSE schools in Marathwada:

- The study reviewed infrastructure, curriculum, teacher-student ratio, and administrative efficiency

in CBSE schools.

- Identified areas needing improvement, especially infrastructure and teacher training.
- Emphasized adopting innovative teaching methods, personalized learning, and strong administrative structures to enhance educational outcomes.
- Suggested a focus on continuous development, student-centric learning, and effective resource management for overall improvement.

Exploring Non-Academic Activities in Sample Schools:

- The study highlighted the importance of extracurricular activities (sports, cultural, skill-building) in holistic student development.
- Recommended dedicated time slots for activities, adequate facilities, and fostering an inclusive environment.
- Encouraged inter-school competitions to promote student involvement, life skills, and balanced growth.
- Stressed the need to integrate extracurriculars into the curriculum for well-rounded education.

Identified Problems and Recommendations for Excellence:

- Schools faces challenges such as outdated infrastructure, limited resources, and traditional teaching methods.
- Proposed a comprehensive strategy to overcome these issues and achieve excellence in CBSE schools.

Impact of District Development on Students' Performance:

- Strong districts lead to higher student achievement.
- Investments in education, healthcare, and social programs boost academic success.
- Better facilities and family conditions improve learning outcomes.
- Collaboration among policymakers, schools, and communities is essential for progress.

Suggestions for Improving Marathwada's CBSE Schools:

- Improve Infrastructure: Upgrade classrooms, labs, and sports fields for better learning environments.
- Fair Resource Distribution: Ensure all schools have equal access to necessary resources and extracurricular activities.
- Modernize Teaching: Use interactive methods and technology to boost engagement and critical thinking.
- Teacher Development: Provide continuous training to enhance teaching skills.
- Effective Monitoring: Implement systems to track academic progress and guide improvements.

- Strengthen Parent Involvement: Foster open communication and collaboration with parents.
- Supportive Environment: Promote diversity, well-being, and community spirit in schools.
- These steps can lead to high-quality education for all students.
- **Limitations and Future scope**

Several issues pertinent to the study were clarified by the research findings and accepted hypotheses in this comprehensive analysis of CBSE schools in Marathwada. the constraints that were faced throughout the research process and suggests possible directions for further investigation.

- **Limitations:**

1. Population Quantity: The results of the research are based on a small sample of Marathwada CBSE schools, which might not accurately reflect the region's diversified educational landscape.
2. Information Availability: The depth of study in some areas may have been hampered by the lack of data on some factors, such as district development indicators and the application of CBSE policy.
3. External variables: The research findings may have been impacted by outside variables that were not included by the study, such as changes in the economy and sociopolitical dynamics.

- **Future Scope:**

1. Longitudinal Studies: To get important insights into how district development, academic initiatives, and managerial choices affect student achievement over time, longitudinal studies may be conducted.
2. Relative Assessment: By contrasting Marathwada CBSE schools with those that belong to other educational boards or are situated in various locations, it may be possible to pinpoint best practices and potential areas for development.
3. Strategy Assessment: Considering how well CBSE rules and guidelines support educational fairness and excellence could help shape future policy creation and execution tactics.

To sum up, while this study offers insightful information about a number of important areas of Marathwada's CBSE schools, there is still room for more investigation and research to enhance learning results and address persistent issues.

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